

MONTANA DEQ

LILLY/ORPHAN BOY MINE FACT SHEET

LILLY/ORPHAN BOY MINE RECLAMATION PROJECT, POWELL COUNTY

MINE WASTE CLEANUP BUREAU, ABANDONED MINE SECTION

January 2011



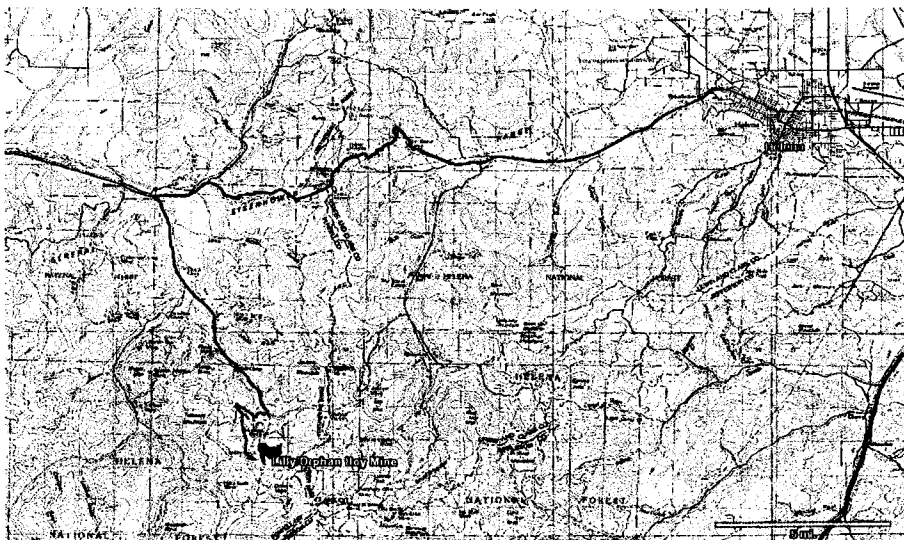
PROJECT DESCRIPTION

The Lilly/Orphan Boy Mine is an abandoned hard rock mine composed of one and a half acres of mining impacted land along Telegraph Creek. Contamination is a residual of historic mining activities dating from the late 1890s to the early 1950s. Characteristics of the site include a 250-foot shaft, three adits including one that discharges heavy metal laden acid mine drainage (AMD) into Telegraph Creek, and three waste rock piles totaling approximately 3,430 cubic yards. Heavy metals, principally lead and arsenic, have been identified in waste rock and sediments in Telegraph Creek and in the AMD. Surface water quality standards are exceeded for arsenic, cadmium, copper, lead, and zinc. This site currently ranks 12th on the DEQ Priority Abandoned Hard Rock Mine list of 133 sites that need reclamation. Telegraph Creek is listed on the DEQ 303(d) list of impacted water bodies.



PROJECT LOCATION

The Lilly/Orphan Boy Mine site is located at an elevation of approximately 7,000 feet above mean sea level on the western edge of the Continental Divide, approximately seven miles south of Elliston, Montana, in Section 15, Township 8 North, Range 6 West, in Powell County. The site is accessed by traveling east from Helena along U.S. Highway 12, turning south onto Little Blackfoot Road, and continuing left up Telegraph Creek Road.



FOR MORE INFORMATION CONTACT:

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CONTAMINANTS OF CONCERN

The Lilly/Orphan Boy Mine site contains 3,430 cubic yards of heavy metal contaminated soil and sediment. Waste rock and stream sediments contain elevated levels of arsenic, lead, manganese, and zinc. Adit discharge and surface water in Telegraph Creek exceed water quality standards for arsenic, cadmium, copper, lead, and zinc. Lead and arsenic are the primary contaminants of concern (COC) and pose a potential health risk to recreational users and to the environment.

Concentrations of the primary COCs, arsenic and lead, include:

Solid Waste

Arsenic: up to 74,100 mg/kg

Lead: up to 43,800 mg/kg

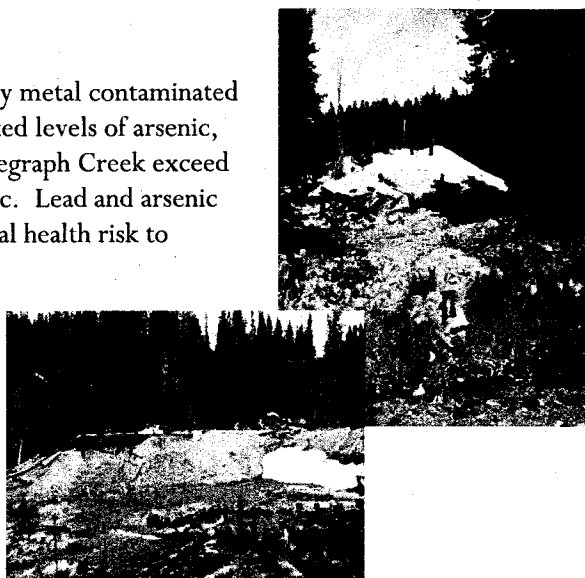
Surface Water

Arsenic: up to 874 ug/L

Lead: up to 70 ug/L

PROPOSED RECLAMATION

The main focus of the Lilly/Orphan Boy Mine Reclamation Project is to implement a source control technology that will eliminate the AMD that is currently being discharged into Telegraph Creek. A technology that will limit human and environmental exposure to solid waste material will also be implemented. Reclamation alternatives to address the AMD and solid waste will be developed during the Expanded Engineering Evaluation and Cost Analysis. Reclamation options that will be evaluated include underground mine water flow control, in-situ and ex-situ treatment of AMD, on-site and off-site engineered repositories (waste disposal facilities), and use of solid waste as the aggregate in a slurry mixture to control AMD. The potential preferred reclamation option includes underground hydraulic plugs to address the AMD and an on-site engineered repository to address the solid media.



Waste rock eroding into Telegraph Creek

BENEFITS OF RECLAMATION

The overall objective of the Lilly/Orphan Boy Mine Reclamation Project is to protect human health and the environment by reducing exposure to mining related contaminants in soil, sediment, AMD, and surface water and to reduce the mobility of these contaminants into the environment. Reclamation activities will benefit Montanans both environmentally and economically. By removing the AMD and wastes in contact with Telegraph Creek, the water quality in Telegraph Creek will improve. By removing contaminated soil, the risk to recreational visitors will be reduced. Reclamation activities will also benefit Montana's economy by providing engineering and construction jobs.



AMD discharging to Telegraph Creek